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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,033	09/27/2004	Kenji Ogawa	2004_1443A	1503
513 7590 01/30/2008 WENDEROTH, LIND & PONACK, L.L.P. 2033 K STREET N. W. SUITE 800 WASHINGTON, DC 20006-1021			EXAMINER HOLTON, STEVEN E	
			ART UNIT 2629	PAPER NUMBER
			MAIL DATE 01/30/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No.		Applicant(s)	
	10/509,033		OGAWA ET AL.	
	Examiner		Art Unit	
	Steven E. Holton		2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 November 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 November 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. This Office Action is made in response to applicant's amendment filed on 11/5/2007. Claims 1-4 are currently pending in the application. An action follows below:

#### ***Response to Arguments***

2. Applicant's arguments, see page 7, filed 11/5/2007, with respect to the rejection(s) of claim(s) 1-3 under 35 USC 102(b) have been fully considered and are persuasive in light of the amendments to the claims. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly applied prior art.

#### ***Claim Objections***

3. Claim 4 is objected to because of the following informalities:

Regarding claim 4, the final limitation states "a duration of the second sustaining period". The Examiner believes the phrase should be "the duration of the second sustaining period". This is because only a single second period is named within the claim and it would have only one duration that could be changed.

Also, the last limitation recites "a percentage of lit discharge cells" which indicates multiple discharge cells. However, the preamble of the claim recites "a plasma display panel including a discharge cell", which implies only a single discharge cell. The Examiner recommends changing the preamble of the claim to provide "a

plurality of discharge cells, each discharge cell being formed..." rather than a singular discharge cell. A typical display device would be comprised of numerous discharge cells (pixels) to form the entire display.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto et al. (USPN: 6369781), hereinafter Hashimoto, in view of the Applicant's Admitted Prior Art (Specification, page 2, line 5 – page 3, line 21; Fig. 8), hereinafter AAPA.

Regarding claim 1, Hashimoto discloses a plasma display device with scan, sustain and data electrodes. Hashimoto further discloses a method of operation including "dividing one field period into a plurality of sub-fields, each comprising an initializing period, a writing period and a sustaining period (Fig. 19, elements reset period, addressing period and sustain discharge period; the Examiner notes that the reset period corresponds to the initializing period and there are two subfields shown in the timing diagram of Fig. 19); providing a first sustaining period and a second sustaining period in a sustaining period of at least one sub-field (Fig. 21A-C), in the first

sustaining period, a transition period of a sustain pulse applied to the scan electrode not being temporally overlapped with a transition period of a sustain pulse applied to the sustain electrode (Fig. 21A-C; time period 'sustain discharge period'; col. 26, lines 7-29), and in a second sustaining period, a transition period of the sustain pulse applied to the scan electrode being temporally overlapped with a transition period of the sustain pulse applied to the sustain electrode (Fig. 21A-C; time period 'group of second assistant pulses'; col. 26, lines 7-29; the Examiner notes there is no time break between pulses in this period therefore, the transition periods of the pulses are overlapping temporally); and disposing the second sustaining period at least at an end of the sustaining period (Fig. 21A-C, the 'group of second assistant pulses' comes after the sustain discharge period; Figs. 19 and 23 show the entire subfield period is ended by the 'group of second assistant pulses')."

However, Hashimoto does not expressly disclose "applying a ramp voltage waveform or a gradually changing waveform during the initializing period to cause an initializing discharge".

The AAPA teaches applying a ramp voltage waveform during the initializing period to cause an initializing discharge (page 2, line 21 - page 3, line 2; Fig. 8, the ramping waveform shown in the "initializing period").

At the time of invention it would have been obvious to one skilled in the art to modify the teachings of Hashimoto with the teachings of the AAPA. The rectangular initialization pulses used by Hashimoto could be replaced with the ramp voltage waveforms used for initialization as taught by the AAPA. The motivation would be to

provide a weak discharge during the initialization period and adjust wall electric charges on the electrodes to appropriate values for operation of the discharge cell (disclosure; page 2, line 24 - page 3, line 2). The Examiner notes that the use of a ramp waveform as part of an initialization period is known in the art and commonly used in many plasma display driving methods. Therefore, it would have been obvious to one skilled in the art that the rectangular initialization pulses of Hashimoto could be replaced with ramp waveform pulses of the AAPA to produce a driving method of a plasma display panel as described in claim 1.

Regarding claim 2, the AAPA discloses the initializing period of a sub-field is performed only on discharge cells that have undergone sustain discharge in a previous sub-field (page 2, lines 17-20 and page 3, lines 24-28). Hashimoto discloses the sustaining period with first and second periods operated for each sub-field.

Regarding claim 3, Hashimoto discloses, the second sustaining period where the transition periods are overlapped is used to substantially cause no self-erase discharge (col. 26, lines 7-29).

#### ***Allowable Subject Matter***

5. Claim 4 would be allowable if rewritten or amended to overcome the objections provided above.

The following is a statement of reasons for the indication of allowable subject matter:

The present invention is directed to a method for driving a plasma display panel to remove self-erase discharge during a portion of the sustain discharge period. Dependent claim 4 identifies the uniquely distinct features "duration of the second sustaining period is changed according to a percentage of lit discharge cells". The closest prior art, Hashimoto, Takeuchi et al. (USPN: 6686698), Kuriyama et al. (USPN: 6104362) and Nagai (USPN: 6011355) disclose overlapping temporal transitions of pulses but do not discuss different duration periods based on percentages of lit and unlit discharge cells; Takeuchi et al. and Kuriyama et al. discuss different numbers and frequencies of sustain pulses based on percentages of lit and unlit pixels but do not discuss changing durations of periods within a sustain period, either singularly or in combination, fail to anticipate or render the above underlined limitations obvious.

### ***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

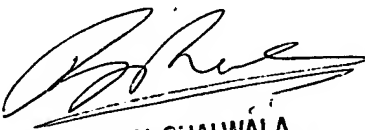
extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven E. Holton whose telephone number is (571) 272-7903. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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January 24, 2008

  
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